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SURGICAL TREATMENT OF GLAUCOMA.

BY J. H. DIX, M.D.

[Communicated for the Boston Medical and Surgical Journal.]

BEFORE saying any thing more on this subject, I wish to make to the Editors of this Journal and to its readers an explanation, and to certain gentlemen in New York an apology, for a misstatement in a previous article.

To substantiate the remark which I thought it my duty to make as to the culpable silence or misrepresentation of the American medical press, I carefully looked over for a year previous the tables of contents of Journals published in this country, which I was in the habit of seeing and which were accessible, on the presumption that it was unnecessary to look further back for mention in other parts of the country of a matter which in this neighborhood certainly had been utterly neglected. A search of two months earlier, of the *Medical Times*, would have shown me that Drs. Dubois, Agnew, Hinton, Noyes and Bumstead, of New York city, had for two years past been familiar with the surgical treatment of glaucoma, and, as I infer from Dr. Bumstead's statement, satisfied of its utility. I am obliged to Dr. Bumstead for his correction, freely acknowledging that New York, in this important step in ophthalmic surgery, was two years in advance of Boston, and as a Bostonian find some consolation in the fact that Dr. Bumstead, who initiated the treatment in New York, was a Boston boy. I shall be happy to meet with reclamations elsewhere, and to except the profession in other places than New York, from a reproach which I believed to be as general as it was just.

In that article, in view of the delay in the adoption of iridectomy or other surgical treatment for glaucoma, I attributed it in part to the silence or misrepresentation of our medical periodical press. But there are probably other and more effective reasons. One of them is, perhaps, the supposed difficulty of diagnosing the disease at a period early enough to secure a fully successful result; and an-

other, the impression, derived from the frequent reference to ophthalmoscopic observation in the details of cases in Europe, that an exploration with the ophthalmoscope is necessary to a decisive diagnosis.

To the description of glaucoma, as given in treatises upon diseases of the eye written some years ago, and still very justly esteemed as standard works, additions of more or less value have been made by modern observers. They are embraced in the following description by Hulke, in quoting from whom I have taken the liberty to change somewhat the succession of the symptoms, so as to put first those which in my opinion are most significant or most available, and Italicising those which are essential to the diagnosis at an early period.

"*Premonitory Symptoms.*—Rapidly increasing presbyopia; the appearance of a colored halo round the flame of a candle; the spontaneous appearance of flashes and other spectra. Intercurrent obstruction of vision, attended with vague orbital and frontal pains, *slight hardness of the eyeball*, and contraction of the field of vision. The *pupil is large and sluggish; the size of the anterior chamber is much diminished.* The duration and intensity of these symptoms are very variable, but they are rarely absent.

"*Acute Glaucoma.*—The active stage sets in as a sudden and violent outbreak, often at night. Violent racking pain in the eyeball, often attended with sickness, and followed by rapid extinction of sight. *The pupil is widely dilatel and motionless;* and the lens has sometimes the peculiar greenish tint which was formerly considered so characteristic. *The globe is very hard;* the ciliary vessels are swollen; the conjunctiva is red and often chemosed, the cornea is dull, and its sensibility is lowered. Remissions are followed by fresh paroxysms, and complete, irremediable blindness always ensues.

"*Chronic Glaucoma.*—The premonitory period slowly glides into the active. The obscurations, which were at first evanescent and separated by long intervals, become more frequent, and last longer. *The tension of the globe increases.* The contraction of the visual field progresses. The iris becomes dull; the aqueous humor turbid; the cornea dimmed and flattened.

"*Ophthalmoscopic Signs.—Excavation of the optic nerve entrance,* and pulsation of the retinal vessels. To these, capillary apoplexy of the retina is often added; and sometimes there are small blood-clots in the vitreous humor, which is unnaturally firm. It is only late in the disease, when all the component structures are undergoing atrophy, that the vitreous humor becomes fluid.

"*The Nature and Causes of the Glaucomatous Process.*—All the leading features of the glaucoma are due to excessive tension of the eyeball from a superabundance of fluid within it, which distends the vitreous humor. This fluid—serum—is derived mainly from the choroid."*

* By J. W. Hulke, Esq., F.R.C.S., Assistant Surgeon to King's College Hospital and to the Royal London Ophthalmic Hospital. Braithwaite, Part 42, p. 205.

Of several of these signs of modern discovery, it may be said that they are possible and occasional concomitants, rather than essential diagnostic symptoms, and that in the early stages especially of glaucoma their entire absence does not invalidate the diagnosis. Such are the swelling of the ciliary vessels, the flattening of the cornea and its lowered sensibility.

The ciliary region, in decided acute or chronic glaucoma, also, is sometimes as free from any visible congestion, and presents a surface as white, as in perfect health.

Instead of flattening of the cornea, which in my experience, except in cases clearly of long duration, is an unfrequent, and by the ordinary means of observation not a readily determined symptom,* most continental writers speak in this connection of a flattening of the anterior chamber of the aqueous humor. This may of course be the consequence, in whole or in part, of a diminished convexity of the cornea, but in cases of glaucoma usually the chamber is flattened, or, more properly speaking, narrowed, chiefly by the increased volume of the vitreous humor, and perhaps other posterior tissues, thrusting forward the lens and its suspensory ligaments so that the posterior chamber is quite obliterated, even without the removal of its anterior boundary by the extreme dilatation of the pupil. This flattening of the chambers, with its consequent approximation of the anterior capsule of the lens towards the posterior surface of the cornea, is one of the earliest and most frequent, and also one of the most significant symptoms. It is also a most important symptom to be borne in mind during the operation of iridectomy. The flattening of the cornea is of itself a symptom of little moment. There may be in fact an increased, instead of a lessened convexity of the cornea, and the advocates of division of the ciliary muscle (intraocular myotomy) claim that this operation was first applied to a case of glaucoma in which the cornea bulged forward, from constriction around its margin by the ciliary muscle.

As to insensibility of a cornea, it is certainly not a very constant symptom of glaucoma, and is sometimes met with in other diseases.

Mr. Hulke has placed the ophthalmoscopic appearances last, and they are not Italicised. In the first place, because, at the early access of the disease, when the operation is most hopeful, these appearances probably do not exist in such a degree as to be cognizable even by an accustomed observer. Secondly, because, from the turbid state of the aqueous humor in the early, and the diplochromatic state of the crystalline lens in the mature stages of glaucoma, such exploration is often impossible. Thirdly and chiefly, because when one or more of the internal textures of the globe are in a state of active inflammation, the stimulus of light from the ophthalmoscope may be injurious. Lastly, because, "in the present state of our knowledge, the lesion of the optic nerve alone is no longer to be consi-

* By Helmholtzer's Ophthalmometer the convexity of the cornea may be mathematically measured.

dered as defining glaucoma, because in a series of cases it has a pathogenicus quite foreign to glaucoma."*

With reference to this lesion or excavation of the optic nerve, which, though it may not be conclusively diagnostic of glacoma, is one of the most interesting and important revelations of the ophthalmoscope, the following explanation by Dr. Mackenzie may be useful to gentlemen who are not often called on to make ophthalmoscopic examinations.

"To discern the pulsatory movement of the vessels, requires a sharp and experienced eye, and the observer will find it of service, while directing his attention to this point, to have the patient's head supported, and the diseased eye steadied by the fingers of an assistant.

"If the indirect or inverted method of ophthalmoscopic observation be selected, an optical deception is apt to bewilder a beginner, as to the condition of the entrance of the optic nerve, a nearly circular spot, though not unfrequently oval, variable in size, but measuring on an average 0·6 line in diameter, and which, although styled *papilla* or *colliculus*, is, in its normal state, nearly level with the retina, and even a little depressed in its centre. In the direct method, where the observer regards the illuminated non-inverted fundus oculi through an aperture in a concave mirror without the aid of any extraneous lens, the great magnifying power of the cornea and humors of the patient's eye, gives to the papilla an apparent magnitude larger even than that of the pupil; but in this way, it cannot be well seen as a whole, and generally requires the eye of the observer to be brought inconveniently near to that of the patient. Instead, then, of using the patient's eye as a powerful single microscope, in actual contact with the objects on the fundus oculi to be examined, and thus viewing them directly, it is better to obtain a smaller but more defined image, although an inverted and virtual one of those objects, by converting the patient's eye for the time into the object-glass of a compound. microscope, which we do by holding in front of it a thick convex lens. The image which we then see of the several parts of the fundus oculi is an inverted one, like that of an object examined with any ordinary compound microscope; the entrance of the optic nerve is seen towards the temple instead of the nose; the macula lutea appears to the nasal side of the optic nerve instead of the temporal, and a little below the level of the nerve instead of above it; while the principal trunks of the retinal vessels, instead of branching in the direction of the temple to embrace the macula lutea, seem to bend towards the nasal side of the eye. The apparent position, in fact, of all the objects on the fundus, viewed in this way, is the reverse of their real position.

"The most important optical deception which arises from viewing the fundus in the indirect method, as well as the most puzzling

* Dr. A. Von Graefe on Glaucoma, p. 308.

to a beginner, affects the papilla. The student has probably heard, that the papilla, in the glaucomatous eye, is cupped or excavated, but to his view it appears quite the reverse, it appears rounded and prominent.

"To comprehend clearly that this is an illusion, all that one requires to do, is to impress with the head of a pin a small dimple on a bit of paper, and put this under a compound microscope, with the concave side of the impression uppermost. The same appearance will then be seen, which is presented by the papilla of the glaucomatous eye, viz., that of a rounded and protuberant surface.

"This optical deception arises from the inversion which the image suffers by being viewed through the compound microscope. We judge that an object, viewed with a single eye, is convex or concave, solely by the manner in which light is reflected from the body under examination. The light which falls obliquely on a convex surface illuminates that side which is nearer to the source of light; the side farther from it is in shade. The light which falls obliquely on a concave surface illuminates that side which is farther from the source of light; the side nearer it is in shade. Let the source of light remain in the same position, but invert the image of the object illuminated, so that the light which falls on the farther side of it may seem to fall on the near side, which is the case when we look through the compound microscope at the hollow on a bit of paper, or when we examine the optic papilla through the compound microscope formed for the occasion by the patient's eye *plus* the convex lens held in front of it; and both the dimple on the paper and the papilla, although they are actually cupped or concave, will then appear convex and prominent.

"If, on the other hand, we turn the convex side of the dimple on the paper uppermost, and view it with the compound microscope, it appears concave. The inversion of its image causes the light which falls on its near side, to appear as if it fell on its further side, and thus the eye is subjected to a deception the reverse of the former, and from which it cannot free itself. If there be cases, then, in which the end of the optic nerve within the eye actually projects in a convex form, they will offer, when examined in the indirect method, the appearance of a cup or depression.

"Such facts have long been familiarly known; the apparent transmutation of an intaglio into a cameo, or that of a cameo into an intaglio, under the compound microscope, being a common source of amusement, fully discussed by Sir David Brewster in his 'Letters on Natural Magic, Letter V.' Important as their bearing is on pathological examinations of the eye, they seem to have escaped the notice of ophthalmoscopists, till attention was directed to the subject by Dr. A. Weber, in a paper in the 'Archiv für Ophthalmologie,' Band II., Abtheilung I., Seite 141."

I would not be understood as depreciating the value of ophthalmoscopic observation in glaucoma. The modern pathology of the

disease rests upon it, and, taken in connection with other symptoms, it is one of the most important and conclusive, and in some otherwise doubtful cases it may be indispensable for correct judgment and successful practice. But there are cases in which it is inexpedient, and others in which it is impossible to use the ophthalmoscope—in which, nevertheless, the diagnosis of glaucoma is from other symptoms made sufficiently clear to justify and require surgical intervention. Certainly no gentleman should, from want of sufficient familiarity with the ophthalmoscope to detect arterial pulsation and excavation of the optic nerve, hesitate in an otherwise well-marked case of glaucoma to operate either by iridectomy or intraocular myotomy. Especially should he not hesitate when one eye has been lost by glaucoma, and similar symptoms are commencing in the other, pointing to the same result. If the symptoms are equivocal or incomplete, provided they are the same that preceded and accompanied the extinction of vision in the other eye, and provided also that one or two of the symptoms plainly indicate intraocular pressure, and that in the treatment of the eye first attacked, as well as that now threatened, the ordinary general and local means appropriate to the relief of inflammation of the internal textures of the eye have failed to relieve; although there may be a doubt whether the disease is simply glaucoma, there can be none as to the propriety of performing one of the three surgical operations by which intraocular pressure may be relieved. In such a case it might be expedient to adopt at first the very simple operation of paracentesis (evacuation of the aqueous humor through a small puncture in the cornea), and to postpone the more effective but somewhat more difficult or complex operation of iridectomy or intraocular myotomy until it is found that, having attained by paracentesis a temporary relief, confirming the diagnosis, the symptoms recur. There can now be no question that the practitioner has to choose one of two alternatives —either to perform the operation of iridectomy, or intraocular myotomy, or to abandon the patient to irremediable blindness.

It has been formally objected to the operation of iridectomy, that it does not address itself to the morbid processes of the disease which it is intended to relieve—that it cannot prevent or relieve the glaucomatous habitus. That it is a preventive, remedy, or cure, for glaucomatous blindness, by no means implies that it controls the morbid processes, but only that by removing one of their effects, pressure on the retina and optic nerve, it enables the organ to pass through that process without accomplishing the blindness otherwise inevitably incident to them. So tracheotomy cures a case of croup, not because it relieves the inflammation of the mucous membrane of the larynx, but mainly because it enables the patient for a time to breathe in spite of it. In either of these diseases the operation, though not controlling them, does, by the relief of a single symptom, effect something more than this negative good, and probably facilitates and expedites the curative influences of nature and art bearing upon them.

Still it is rational and prudent not to regard iridectomy as an absolute cure for glaucoma, or any of the other diseases in the treatment of which it is claimed to be useful, but only as a necessary adjunct, without which all other means and appliances, local and general, are almost nugatory. In the words of its able originator and advocate, "It is its efficiency in diminishing pressure, and not any special relation to some particular disease, that renders the operation valuable, or determines or justifies its employment." * For it must be confessed that notwithstanding all the light that modern research has thrown upon it, glaucoma is often, in its early stages, a disease difficult to diagnose, and the practical value of the operations of iridectomy or incision of the ciliary muscles is not lessened; and their applicability is perhaps more easily recognized by regarding them only as means more effective and permanent than any heretofore known for the relief of the condition of excessive intraocular pressure.

Of the indications of this condition, the only absolutely indispensable and unmistakable ones are, as it appears to me, dilatation of the pupil, hardness of the globe, and obscuration of vision continued or recurrent. Not that these three symptoms constitute glaucoma, or that they are actually ever found unconnected with others; but that when they co-exist, whether alone or in combination, with other symptoms, there is, in the failure of speedy relief otherwise, an imperative demand for surgical aid.

The objection has been raised. that removing a large portion of iris would disturb the accommodation of the eye. Whether or not it does, my limited experience does not at present enable me to determine; and in fact, for the want of the needful observations and dates previous to the access of disease, it must often be very difficult to do so. Those who have had the largest experience, find this to be not a well-grounded objection, and on the contrary find in cases marked by flattening of the cornea an improved power of accommodation from the compensating effect of the restored convexity of the cornea. This objection, if valid, is of no weight as against any operation for the relief or prevention of blindness, for an eye without any internal power whatever of changing its accommodation of sight is better than an eye without sight.

Another and more trivial objection is the deformity of a dark speck on the sclerotic. To this is replied, that if the iris itself is dark, this is hardly observable; that at the period of life when the operation is required for glaucoma, if observable it is unimportant; and that if it is desirable wholly to avoid this defect, it can be avoided by making the incision on the upper side of the cornea, so that it shall be covered by the upper lid.

Another reason for the general neglect, in this country, of the operation of iridectomy for glaucoma, is probably an exaggerated

* Conclusion of von Graefe on Glaucoma.

idea of the difficulty of performing it, and also perhaps a misapprehension of the mode of performing it from directions as usually given. For some remarks on this part of the subject, I shall in a future number claim a small space.

HOUR-GLASS CONTRACTION.

[Communicated for the Boston Medical and Surgical Journal.]

Messrs. Editors,—In the discussions of the Boston Society for Medical Improvement, reported in the last No. of the Journal—August 7th—Dr. Ayer reported cases of hour-glass contraction following the use of ergot, and asked if other gentlemen present had noticed the same. It was also suggested by another that the use of ergot in labor is followed by retention of the placenta. The influence of ergot on the child was also considered.

In regard to the first inquiry, as to the influence exercised by ergot in producing hour-glass contraction, so far as my observation extends, I have met with but one case, in a practice of fifteen years. It followed the use of ergot in large and repeated doses, in a case of extremely difficult labor, in which labor could be finished only by exciting the uterus to violent action. The case was primapara. Having waited nearly two hours after the birth of the child, for the spontaneous delivery of the placenta, whilst friction of the bowels, pressure on the womb and gentle tractions of the cord were being made, I introduced my hand into the uterus, where it was immediately arrested in its progress by what seemed to be the fundus; but running my finger up the cord, I found it closely embraced by what I now understand to be an hour-glass contraction. It was with some considerable difficulty that this rigid contraction was overcome sufficiently to pass my hand through it, but which being accomplished, I found my hand in a second cavity, with my wrist embraced by the recently dilated portion. I succeeded, very readily, in detaching the placenta from the fundus uteri, to which it was firmly attached, not a drop of blood, up to this time, having escaped the external organs. The contracted portion yielded very readily to my hand, when withdrawn with the placenta. Rapid recovery followed, without one untoward symptom.

In regard to the second inquiry, as to the influence of ergot in retarding the delivery of the placenta; so far as I have had opportunity of judging, retention does follow the use of ergot. Almost invariably after the use of ergot in labor, I am obliged to introduce my hand and remove the placenta. And, although no sensible signs of uterine contraction may attend such artificial delivery, hæmorrhage does not follow to the extent that it does in similar circumstances where no ergot has been used. Alarming hæmorrhage frequently follows the latter case, but never the former.

After careful observation on the influence of ergot on the child, I cannot say I have seen an instance in which the morbid appearances

following the use of ergot, might not more rationally be attributed to other causes than to this drug.

In conclusion, I can say with Dr. Storer, as the result of my observation in the use of ergot in obstetric practice, it is one of the most useful and satisfactory articles of the Materia Medica—and, properly used, inflicts no injury to the mother, and, so far as appears, none to the child. W. A. HARVEY.

Yarmouth, Me., August 21, 1862.

ON THE PATHOLOGICAL ANATOMY OF PUERPERAL FEVER.

BY PROFESSOR BUHL.

PROFESSOR BUHL, of Munich, having examined the bodies of fifty women who died of puerperal fever, states that a constant and characteristic appearance is a pappy, red or dark brown or grayish-black mass lining the inner wall of the uterus, giving forth sometimes a gangrenous and sometimes a putrefactive smell. It is this matter which supplies the poisonous infection of puerperal fever; but as to the cause of the production of the fever differences of opinion prevail; some regarding it as the consequence of the immediate passage of poisonous matter into the womb, while others think that a preliminary poisoning of the blood by misasmata takes place, the corrupted mass being only a secondary result. Anatomically, we may distinguish two forms of puerperal fever—puerperal pyæmia and puerperal peritonitis—forms which may be clinically distinguished, as it is of importance in prognosis that they should be so.

Puerperal pyæmia does not usually prove fatal before the ninth day, and frequently not until after the third week. It is chiefly met with where the disease does not put on an epidemic form, the veins being the channel of infection; coagula, accompanied by suppuration, being found in the veins of the walls of the uterus, in a pampiniform plexus or in a spermatic vein. In no instance did the author ever find both spermatic veins obstructed, and in only one case was the entire vena cava inferior filled with adherent coagula. These coagula and their subsequent caseous metamorphosis are quite sufficient to establish the existence of puerperal pyæmia, the so-called metastatic abscesses being seldom met with. Œdema of the lungs and ecchymosis of the pleura were frequently met with by the author.

The puerperal peritonitis was more frequent, more violent, and more rapidly fatal than the puerperal pyæmia, inasmuch as death sometimes occurred within two days after delivery, and in but few cases was delayed to the third week. Of the 32 cases of this variety only 2 were chronic, proving fatal in the course of six or eight weeks. In all the cases purulent exudation was found, in 18 instances occupying the tubes, and in 14 the subserous tissue of the

uterus. The two conditions were found combined in only 4 instances, and a plugged condition of the veins was observed only in 5 instances. Of the 18 instances in which puerperal pyæmia occurred, in only 2 was there pus in the tubes, and in only 1 subserous effusion of pus; so that of 20 cases of tubal suppuration, in 18 peritonitis was present, and of the 14 cases of subserous suppuration peritonitis occurred in 13. On the other hand, of 23 cases of purulent coagula of the veins, in only 5 did peritonitis occur, and in all these there was subserous or tubal suppuration also, and in 16 cases in which these parts exhibited no pus, no peritonitis took place. The disease of the veins thus bore no relation to the occurrence of peritonitis. It results from these facts, that peritonitis may arise either from the immediate passage of the poisonous material from the uterus through the tubes, or from the conveyance of this from the inner wall of the uterus by the lymphatics. The supposition that the pus may have proceeded from the peritoneum into the tubes is negatived by the fact of these having been free of it in fourteen cases; and the pus of the peri-uterine, subserous tissue or of the lymphatic vessels must be regarded rather as a consequence than a cause of the peritonitis, inasmuch as it was absent here in twenty instances. The prognosis is not alike in these two modes of origin of the peritonitis. That induced by the pus from the tubes is a much slighter and more simple inflammatory process, met with when there is little or no epidemic extension of the disease; while the peritonitis resulting from lymphatic absorption is a much severer form of disease, preceding or accompanying general infection, and is especially met with in the epidemic form.

In both of the principal forms of puerperal fever, besides the morbid uterine appearances there were found—1. Almost constantly swelling and watery infiltration of the retro-peritoneal, inguinal, and (though seldomer) the mesenteric glands. 2. Osteophytes on the internal surface of the cranium. 3. In several cases, especially in pyæmia and lymphatic absorption, a distension of the cortical substance of the kidney, together with the microscopical appearances corresponding to the acute stage of Bright's disease. In only two of fifty individuals was tuberculosis found.—*Froriep's Notizen.* 1861. No. 13.—*Med. Times and Gazette.*

PHOSPHORUS NECROSIS.

In a recent clinical lecture by Mr. Paget, in speaking of a case of Phosphorus Necrosis, he remarked as follows:—

In this case there was a special interest in the fact that it was an exception to the almost absolute rule that the disease only occurred in lucifer-match makers. Lucifer-match makers were hard worked and were kept in a bad atmosphere, and to this, and not to the phosphorus, some had attributed the disease. Anyone long enough ex-

posed to the fumes of phosphorus suffered from necrosis of one or both jaws, and the majority employed in the manufactories suffered at one time or another from this disease. But there were certain conditions which were necessary before a person became liable to suffer. So long as the mucous membrane was intact, and the teeth sound, there was no mischief. This had been carefully ascertained, and was quite certain. In one of the large German manufactories it had been found that if the workmen had broken or decayed teeth, gumboils, or anything which bared the periosteum, they became liable to suffer, and this was confirmed by experiments on animals. It was found that if healthy rabbits were kept in a chamber into which the phosphorus fumes were admitted, no disease of the jaws followed. If, however, their teeth were broken, or if in any way the periosteum were exposed, then they began to suffer. Thus, then, it may be accepted as a well ascertained fact, that unless the phosphorus fumes come in contact with the periosteum, the disease is not produced.

The manner in which the fumes produce necrosis is also singular, unlike other caustics, as, for instance, nitric acid. It does not act merely locally, destroying what it touches, but it seems to affect more or less the neighboring bone—part of it, or in time the whole of it. There is no other substance which, when locally applied, seems to produce results over so large a space. Not unfrequently it would thus destroy the whole bone attacked, beginning first at a single point of bared periosteum, as the socket of a tooth after extraction. In this peculiarity of action, it appears to resemble less a mineral than an organic poison.

So far as has been at present ascertained, no bones except those of the upper and lower jaw have been attacked; although of course, now and then, there must have been, as from accidental strumous disease, exposure of other bones to the fumes. The contiguous nasal bones never suffered, at least not primarily, but sometimes as a sequence to disease of the jaw bones. This curious choosing of certain structures shows that these bones have distinctive peculiarities, for which, by comparison of their texture with other bones, we cannot yet account. It was just as difficult to tell why mercury should affect the jaws more than other bones. It is the more difficult to explain why these bones should suffer from mercury and phosphorous acid, as they are not liable to be affected by organic diseases, as syphilis or gout.

In reference to the way in which the necrosis was brought about, Mr. Paget said that inflammation of the periosteum was the first step. He showed a specimen in which new bone had been deposited at many points, as a result of this process. This was a constant first effect, and new bone was always to be found, more in the lower than in the upper jaw. In a few—very few—cases the disease would stop here. Generally, however, the result was necrosis of

the whole of the affected bone, and that, too, of the new bone as well as the old.

In the case of removal of the greater part of the lower jaw (the first case related), the periosteum of the remaining part of the bone was inflamed, and probably to some extent the necrosed bone might be replaced by new bone.

In a case of phosphorus necrosis, it was difficult to say, when once begun, how it would end. In some a limited part of the bone would separate, but in others the whole substance of the maxilla would become necrosed. Mr. Paget had observed that the patients were much disordered in health, but he would not venture to say that there was a special cachexia in this disease. There was, however, much more cachexia than was usual in local disease to that extent. The patients were peculiarly pale, sodden-looking, and exceedingly feeble. They were not thin, but looked as if the blood were deficiently red. There was generally also some bronchitis. It was a matter of inquiry whether the phosphorous acid acted as a poison in the blood—the necrosis being the local manifestation of it.

An important question was, Could the disease, by proper care, be entirely prevented? In some conditions of perfect ventilation, and great care as to the condition of the mouth in those exposed, no doubt it could. Since 1847, in the manufactory at Nuremberg, only one case had occurred in fourteen years. This improvement was due to perfect ventilation, great cleanliness, and inspection of the teeth. It is whilst dipping the matches that exposure to the fume occurs. It is necessary that the fumes should, as much as possible, be blown away from the workmen. No one with broken teeth, gumboils, &c., should be allowed to work at dipping the matches.

The allotropic phosphorus does not fume, and thus, so far as the health of the workmen is concerned, is better. It is, however, more expensive, and more liable to take fire. It is to be regretted, Mr. Paget said, that similar regulations to those in the German manufactories are not adopted in England.

In treating this disease when established, we ought of course to advise removal from the influence of the fumes, fresh air and good diet, and thus hope to limit the necrosis. Is it advisable, when the necrosis is limited, to cut it out? Mr. Paget believed it was; but it was necessary to be cautious in taking for granted that the necrosed part was the only part diseased. There might be periostitis, in the earlier stage of the disease, beyond, so that by the removal of the necrosed bone it is not clear that we should relieve.

After removal in these cases, the repair is very remarkable. In the case of the boy in Darker Ward there was a very large quantity of new bone in the position of the ramus and body. Mr. Paget said that he had seen no case in this disease in which death had occurred, but it would sometimes prove fatal by exhaustion and the supervention of phthisis.—*Med. Times and Gazette.*

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY FRANCIS MINOT, M.D., SECRETARY.

Aug. 11th.—*Continuation of the Discussion on Ergot.*

Dr. J. Bigelow thought that a recommendation of the use of ergot, emanating from the Society, and published with their proceedings, should be accompanied by a caution as to its indiscriminate use. When used without discretion it is dangerous both to mother and child, and in many cases where it is frequently employed, he should prefer, if necessary, to use the forceps, as more manageable. He commended the candor of Dr. Morland in reporting a fatal case in his practice, and thought that if others would do likewise the danger of the drug would be more apparent.

Dr. Storer said he was always ready to yield to the opinions of those who were older and more experienced than himself; but he believed he had had as much experience in the use of ergot as any other practitioner in Boston, and he had never known injury to follow its use when it was indicated. He thought that gentlemen who had had much experience with it differed entirely from Dr. Bigelow in their estimate of its value. He did not hesitate to recommend it to his pupils as harmless when properly given—for instance, when the labor is not a first one, when there is sufficient dilatation, when the head is low in the pelvis, and the pains are absent.

Dr. Putnam said the point was, to know when ergot *was* indicated. The promptness and energy of its action under suitable conditions were most satisfactory. For instance, Dr. P. had been recently consulted in a case in which the labor, after having progressed favorably, was suddenly, and without obvious cause, suspended. There was no mechanical obstacle, and, after waiting two hours, fifteen grains of ergot were administered. The pains at once returned, and the labor was completed within half an hour. On the other hand, he had seen cases where everything seemed to indicate it, and yet it appeared to act injuriously. The difficulty is, that when once it begins to act it cannot be controlled. He had not seen injury to the child in his own practice, but he had no doubt that it was sometimes stillborn, possibly, as some suppose, from the poisonous properties of ergot, but more probably from the effects of violent and unremitting pressure. The mother also is exposed to severe injury.

For these reasons, great as is the temptation, he never prescribed it before delivery without some misgiving. After delivery, or just before the head passes the perinæum, in cases in which the patient had "flowed" in previous labors, it is of inestimable value.

Dr. Bigelow said that powerful remedies were safe when really "indicated;" but if extensively recommended without an accompanying caution as to their use, superficial readers and young practitioners would be led to employ them rashly. When the drug was first introduced into this country, practitioners eagerly resorted to it as a means of shortening labor; it was administered to thousands of women, indiscriminately, and probably thousands of children died in consequence, from the long-continued pressure on the head, inducing a state analogous to apoplexy. The journals of that day teem with cases, and with the conclusions arrived at by the profession, that "ergot kills the children," and this was the experience of the most able and judi-

cious physicians, until at length it got to be known that ergot can be given with propriety only towards the end of labor, and when no impediment to delivery exists save the insufficiency of the pains. Exceptional cases may occur, but this is the general law. Dr. B. mentioned a case of twins, in which, after the first child was born well, a dose of ergot was administered to expedite the birth of the second, which, after twenty minutes continuous pain, was dead-born.

Dr. MINOT said he had lately attended a patient in her second labor, whose first child was delivered with forceps, on account of inefficient pains. The same state of things occurred this time—the pains seemed too feeble to expel the child, although there was sufficient dilatation, and the head was low in the pelvis. He again applied the forceps. After the head was born, a delay of nearly twenty minutes occurred, from the difficulty of extracting the shoulders, which were very broad, and the child, a very large one, was stillborn. He regretted not having given the woman ergot, which, he thought, would have saved the child.

Dr. BIGELOW was of a different opinion.

Dr. GEORGE HAYWARD, Jr. had had a case similar to Dr. Minot's, in which ergot seemed to act most favorably, although the confinement was a first one. The pains had ceased after labor was well advanced, and it seemed as if the child would have been born in a few moments, had they continued. The child was large, but the mother was a tall, large, and well-shaped woman, with a capacious pelvis; the soft parts were relaxed, and the head was not jammed. Aware of the serious objections to giving ergot in a first labor, Dr. Hayward delayed longer than he otherwise should have done, and it was not till the patient was getting exhausted and discouraged that he gave the infusion, freshly prepared, which produced its peculiar effect in a short time, and in a few minutes after it began to operate the child was born alive. The placenta soon followed, and the woman made a good recovery.

Dr. STORER said all agreed that ergot was a powerful agent, and sometimes produced bad effects. The question was, whether it were more likely to do harm when improperly used than any other powerful remedy. If he were lecturing to young men, he would go into the particulars respecting its mode of employment; but he was addressing practitioners, not students.

AUG. 11th.—*Double Uterus.*—Dr. STORER showed some drawings and oil paintings illustrative of a case of double uterus, made by Mr. Edgar Parker, of Saxonville, student of medicine, and accompanied by an account of the case.

The patient was an Irish girl, unmarried, about 25 years old, who died from the effects of poison, probably administered by herself, under the belief that she was pregnant. The organ was completely double, the two cavities being entirely separated. The septum was exactly median, and extended from the os to the fundus. There were no signs of pregnancy. The friends would not allow the uterus to be removed.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, AUGUST 28, 1862.

THE proper use of quinine as a prophylactic against malarious disease is so important a topic at the present time, that we feel ourselves under special obligation to the Surgeon-General for the use of the following letter from one of the elders of the profession, the venerable Dr. Mussey. We took occasion last week to notice somewhat at length Dr. Rogers's valuable pamphlet on the subject, thinking it might fall under the eye of some one of our army surgeons who might derive profit from his suggestions. Dr. Mussey's letter is equally valuable, and we avail ourselves of the privilege of printing it with much pleasure.

"LITTLETON, MASS., Aug. 20, 1862.

"*My dear Sir,*—Within the last few days, the quota of men required of this township towards the 300,000 has been made up by enlistment rather than by drafting, and I feel no small sympathy for these patriots, one half of whom, I am told, are married men; and the liabilities they, with thousands of others of a like description from the old Bay State, will incur from leaving a pure atmosphere and entering one loaded with miasm, impel me to make a suggestion by way of inquiry. Can the quinine be furnished in sufficient quantity for all our troops? It is generally understood to be a prophylactic of miasmatic fever; and it is said to be safe to economize it so far as to give only two grains a day to each man. Dr. Mears, of Indianapolis, made what he regarded as a valuable experiment with quinia when malarious fever was very prevalent within the range of his professional visitations. He took *twelve* grains of sulphate of quinia every Monday morning—rode night and day in a highly concentrated miasmatic atmosphere, and had uninterrupted health. This he continued through the warm season, and the epidemic having greatly abated as the cool season advanced, I think it was in November, he omitted his quinine. In about two weeks he had a regular attack of the fever. In Hays's Journal, either in 1860 or 1861 (I have not the volumes here), a physician of Charleston, S. C., Dr. DeSaussure, has given an interesting paper on the power of quinine as a prophylactic against the poison of miasm.

"In the Chicago *Medical Examiner* for June, 1862, there is an extract from the Edinburgh *Medical Journal*, in which the author, Dr. Adamson, says that he has employed with success the sesquicarbonate of ammonia with the liquor arsenicalis in cases which had long resisted quinine; that he had treated ten cases with this combination alone, all successful—*seven* quartan, *one* tertian, *two* quotidian.

"His formula is—℞. Sesquicarb. ammon., grs. v., dissolved in ʒi. of water, with the addition of five minims of liquor arsenicalis. All this given at a dose, and 'repeated every *two* or every *three* hours according to the frequency of the paroxysms.' No unpleasant effects, save some degree of griping in one patient, and itching of the eyelids in three.

"I remember that the late Dr. Sewall, of Washington, D. C., brought himself into notoriety soon after he commenced practice there,

by using the arsenical solution in miasmatic fever. I think that he relied upon it as the principal if not the sole remedy.

"If our New England men could go South provided with a change of flannel waistcoats and drawers, woolen socks, thick-soled shoes or boots, and be supplied with coffee or tea, and good water instead of alcoholic mixtures, they might well sustain themselves in conflict with any men at the South, especially if led by officers whose brains are not bewildered by anything worse than coffee. The soldiers at Richmond, if deprived of their spirit ration to save their breadstuffs from distillation, will be far more formidable in a prolonged fight than they have been.

"Now, my dear Sir, if you regard what I have said as an intrusion, or if I have said nothing but what has been well known and acted upon in Massachusetts, then please to lay it to the account of the solicitude of an old man for his country and for the brave sons of New England. Very respectfully yours, R. D. Mussey.

"Dr. Dale, *Surg. Gen. of Mass.*"

In a subsequent letter Dr. Mussey says :—

"*My dear Sir,*—I thank you for the kind and prompt notice of my remarks. It is gratifying to learn that our soldiers are adequately provided with the quinine. I see in the Boston *Medical Journal* of this week, a notice of Dr. S. Rogers's pamphlet on the protective virtue of this medicine against miasmatic fever, in which he recommends larger doses than by others have been said to be necessary. Is it not probable that different quantities of the antidote would be required in a proportion corresponding with the degree of concentration of the atmospheric poison?"

Oakum as a Substitute for Lint, in Gun-Shot and other Suppurating Wounds.—Dr. Lewis A. Sayre, Surgeon to Bellevue Hospital, New York, writes as follows to the Editor of the *American Times*, on a subject which at present possesses peculiar interest.

"I have for many years past been in the habit of using picked oakum, in all cases of suppurating wounds, particularly in connection with opened joints, where the suppuration is excessive. The great number of gunshot wounds now in Bellevue Hospital, where I use it entirely to the exclusion of lint, has furnished an opportunity for a number of army surgeons to examine its advantages, and they have requested me to make the subject more generally known to the profession through the medium of your valuable medical journal.

"One of the objects of lint applied to a suppurating wound, is to absorb the discharge; now as most of the lint is composed either entirely or in great part of cotton, it acts more like a tampon, or a retainer of the secretions, than as an absorber.

"If you will take a bale of cotton and immerse it in the river for one month, or even longer, and then remove it, you will find on opening it that the cotton in the centre of the bale is perfectly dry, thus proving that it cannot be soaked through any great thickness, or that it will not absorb moisture. So, when placed over a suppurating wound and left for some hours, it will be found perfectly dry except at the point of contact: acting, in fact, like a bung in a barrel, or a cork in a bottle—to *prevent* the escape of the pus—which necessarily burrows in different directions, thus forming extensive abscesses, and adding greatly to the danger of the patient; and when

removed, the pus will gush out in large quantities. Now, if you place picked oakum over these same wounds, you will find after the same number of hours, that the oakum is perfectly saturated with pus, and the wound itself almost perfectly dry and clean—the oakum acting like a syphon, and discharging the contents of the abscess by capillary attraction. It is necessary to place under the wound a piece of India-rubber cloth, or oiled muslin, for the sake of cleanliness; and in case of much inflammation, by simply wetting the oakum in cold water, and wrapping the oiled muslin around the limb, or wounded part, so as to exclude the air, you have at once the neatest and most comfortable poultice that can be applied to it. In gunshot wounds, which go through and through a limb, particularly if made with the 'Minié ball,' the whirl or screw of the ball entangles in its thread the muscular fibres and cellular tissue, and separates them from their attachments for a long distance from the real track of the ball itself.

"As the muscle and tegumentary tissues are more freely supplied with blood-vessels than the fat and cellular tissue, the consequence is that they begin to granulate much more readily than those other tissues, and will thus often close up the wound, and prevent the free escape of pus, before those parts have perfectly healed, and thus lead to the formation of extensive secondary abscesses. I, therefore, in all cases where no blood-vessels prevent it, pass an eyed probe through the wound and draw through it a few fibres of the oakum or tarred rope, which keeps it perfectly free, and the tar is a very excellent antiseptic, and removes all unpleasant odor.

"A few fresh fibres are twisted on the end of the seton at every dressing and drawn into the wound, and the soiled piece cut off and removed with the dressings.

"Another great advantage which the oakum possesses over lint, which in these times of heavy taxation is not to be overlooked, is its cheapness. Lint at the present time costs from $1.25 to 1.35 per pound, whereas the finest picked oakum can be obtained at the 'Empire Oakum Works,' No. 149 West 39th street, for ten cents per pound. And if it were universally adopted in the army it would save many thousand of dollars to the Government, and I confidently believe the life of many a soldier. And no surgeon who has once used it will ever resort to lint again—particularly if the lint is made of cotton."

Exemption of Fellows of the Massachusetts Medical Society from Military Duty.—It has been decided by the proper authorities that the members of the Massachusetts Medical Society are exempted from draft, by their charter, one section of which reads—"The Fellows of the Society shall not be liable to be enrolled or mustered in the militia of this Commonwealth."

It will be well, however, for any Fellow whose name is likely to be taken by the enrolling officers, to exhibit at the proper time to the "Commissioners to determine claims of exemption," the evidence he has that he is a member of the Massachusetts Medical Society. Such a course will prevent all subsequent misunderstanding or trouble.

Venomous Caterpillars.—A most singular case, perhaps the only one on record, of death caused by caterpillars, occurred a few days

ago in the commune of Dardilly, near Lyons. A little boy, not more than eight years old, had gone into a neighboring wood in quest of birds' nests. Perceiving one on the top of a tree, he climbed up; but in so doing shook down an immense number of caterpillars, many of which fell on his shirt, his only upper garment, and soon covered his breast, which was bare, and penetrated to his arms and shoulders. For a few minutes the child took no notice of this; but he soon felt such an itching sensation, that he was compelled to get down, and run home for assistance. Upon examination, his skin appeared covered with large red spots, which were soon followed by a general swelling, then by fever, somnolency, and delirium; and, notwithstanding all medical care, death ensued in the course of a few hours. The kind of caterpillar which caused this disaster was the *Bombyx processionea* of Réaumur, a very venomous species. Botanists know that if a nest of these insects be touched, or only stirred up with a stick, the person so doing, and remaining for some time near the spot, within reach of the emanations arising therefrom, will be attacked with a papulous eruption of a more or less confluent nature, which will last several days, and be attended with violent itching. Dr. Calmell, physician to the Hospital at Charenton, had preserved a nest of these caterpillars in a large glass phial, which was not opened for upwards of ten years. At length, the phial being accidentally wanted, it was opened in the presence of several persons, who all caught the eruption. This strange property has even suggested to several members of the faculty the idea of using these caterpillars in cases in which it is required to subject the skin to a strong and permanent irritation. We may remark, in conclusion, that the number of caterpillars which infest the trees this year all over France, is quite unprecedented—a circumstance which has called the attention of the authorities and of various learned societies to the question of protecting insectivorous birds, the only really efficacious enemies of the caterpillar.—*Galignani's Messenger.*

A correspondent of the London *Lancet* relates a similar case in his practice, though fortunately not fatal—the caterpillar in this case being, as the writer calls it, "of the sort called the woolly-bear." The eruption resembled that of urticaria, became vesicular, and was attended with much constitutional disturbance.

St. Mary's Hospital, San Francisco.—This institution has just been opened by the Sisters of Mercy. "The building," says the *Medical Press* of that city, "is most admirably located, on the corner of Bryant and First streets, on a beautiful slope, overlooking the Bay, to the south and east. It is 75 by 150 feet on the ground, and four stories high; divided into twelve large and commodious general wards, and a like number of smaller wards; all fitted up in the best modern style, with every improvement calculated to make it compare favorably with the best hospitals in other cities. The Hospital is under the professional charge of Dr. Lee, as Resident, and Drs. Bowie, Toland and Whitney, as Visiting Physicians and Surgeons. An institution thus located, arranged and attended, must, in the nature of things, afford valuable opportunities for the practical study of medicine and surgery, and we have the assurance that these advantages are to be realized by the opening of the wards and operating room to practitioners and students of Medicine, and the generous politeness

with which its medical officers explain cases at the bedside and operating table."

Supplementary Mammæ.—Dr. Turner, of Newport, R. I., reports the following case, published in the annual "Communications" of the Rhode Island Medical Society.

"On the 2d of March, 1860, I attended Mrs. T——, in her first labor. Nothing noticeable occurred in the progress of the case, but coïncident with the appearance of the milk in the mammæ, two glands in the axillæ (one in each) became enlarged, and secreted a sensible quantity of milk; so much, that a decided stream could be impelled to a considerable distance. There was no nipple or areola, and the largest of the glands was of the size of a large shell-bark, the other somewhat less. Dr. Hare speaks of the case he observed, as a detached portion of the mammary gland; mine, on the contrary, gave me the impression of distinct supplementary mammæ. Dr. Hare also speaks as if the case was of rare occurrence, and I do not recollect seeing any other similar record. In my case, the effort for symmetry, generally indicated, seemed to have prevailed."

Dr. H. S. Johnson, of Stoke-upon-Trent, mentions, in a late number of the London *Lancet*, the case of a woman with three breasts, the supernumerary one being just below the left mamma, and after confinement was found to be two and a half inches in diameter and full of milk. Before pregnancy it resembled a mole.

A Mode of Administering Cod-Liver Oil.—Many persons are unable to keep down cod-liver oil, returning it several hours after taking it, even when they have taken it at the beginning of a meal, and strange enough, only vomiting it after the digestion of the aliments has terminated. M. Dannecy having been consulted by many inconvenienced in this manner, and who yet swallowed the oil without any repugnance, recommended them to take after each dose from eight to ten grains of calcined magnesia suspended in a small quantity of water. The success of the plan was most complete.—*Union Médicale*, No. 153.

Births and Deaths in Paris during 1860.—There were born in the *arrondissements* in 1860, 51,056 individuals, and 41,261 deaths took place during the year, giving an access of births over deaths of 9759. Among the 51,056 children born, 14,092 were illegitimate. During the year seven persons died, aged between 95 and 100.

Use of Chloroform in Midwifery Practice.—Professor Martin, of Jena, as the result of observation in nearly 1000 cases, comes to the following conclusions:—1. Narcosis is induced very easily during childbirth, from a half to a drachm of chloroform usually sufficing. 2. The chloroform induces no unfavorable symptoms, nor exerts any ill effect upon the activity of the pains, which at most are slightly weakened at first. 3. Ill consequences do not succeed to the administration, providing the sleep which usually follows the narcosis, and during which the elimination of the chloroform seems to take place, be not disturbed. The favorable effects thus observed, Dr. Martin attributes to his mode of procedure—viz., commencing with small quantities of chloroform poured upon a small handkerchief, and so presented to the patient's mouth and nostrils that she may continue to

breathe atmospheric air while inhaling the chloroform,—*Medical Times and Gazette*, from *Froriep's Notizen*, Vol. iv., No. 22.

A Board of Health has been established in the city of Sacramento, California, and a Constitution adopted by the Board, and published. The *Pacific Medical and Surgical Journal* advocates the establishment of a similar Board in San Francisco, the sanitary regulations of which city are represented as very deficient.

At the Fourth Commencement of the Medical Department of the University of the Pacific, held March 13, 1862, the degree of M.D. was conferred upon five candidates. The number of graduates of this school are as follows:—Two the first session, one the second, six the third, and five the fourth. The daily attendance, during the last session, was almost twice as large as ever before.

Dr. S. Norton, of Wateringbury, Eng., writes to the Editor of the *Lancet* that a woman in his neighborhood, now aged 74, still continues perfectly regular in her catamenial periods.

Books of the Sydenham Society.—The members of the Sydenham Society are informed that the Sydenham books for the year have arrived, and may be had on application at No. 1 Stanford street.

Notice.—We are requested to announce that the Forty-fifth part of Braithwaite's Retrospect was mailed on the 21st inst. from this office, to all members of the Massachusetts Medical Society residing out of the city proper, whose names are on the Treasurer's book as having paid their assessments. Members who have paid, and have not received the part, are requested to forward their vouchers, addressed to the Librarian, at the office of the Medical and Surgical Journal, and the work will be sent by return mail. Vols. 23 and 24 of the Library of Practical Medicine will be sent by mail to members who have not received them, and are entitled to the same, on receipt of the postage (18 cents), or by express, on application at the office of this Journal.

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, August 23d, 1862.

DEATHS.

	Males.	*Females*	*Total.*
Deaths during the week,	45	40	85
Average Mortality of the corresponding weeks of the ten years, 1851-1861,	54.8	50.6	105.4
Average corrected to increased population,	..	..	120.4
Deaths of persons above 90,	..	1	1

Mortality from Prevailing Diseases.

Phthisis.	Chol. Inf.	Croup.	Scar. Fev.	Pneumonia.	Variola.	Dysentery.	Typ. Fev.	Diphtheria.
14	15	0	3	2	0	3	1	0

Books and Pamphlets Received.—The Transactions of the New Hampshire Medical Society—(Seventy-first Anniversary).—Communications of the Rhode Island Medical Society, for 1862.

Deaths in Boston for the week ending Saturday noon, August 23d, 85. Males, 45—Females, 40.—Accidents, 2—inflammation of the bowels, 1—disease of the brain, 3—bronchitis, 2—cholera infantum, 15—cholera morbus, 2—consumption, 14—convulsions, 3—cyanosis, 1—debility, 1—diarrhœa, 7—dropsy of the brain, 1—dysentery, 3—scarlet fever, 3—typhoid fever, 1—gastritis, 1—hæmorrhage, 1—disease of the heart, 3—infantile disease, 1—intemperance, 2—disease of the liver, 1—congestion of the lungs, 2—inflammation of the lungs, 2—marasmus, 4—old age, 2—paralysis, 1—premature birth, 1—unknown, 4—whooping cough, 1.

Under 5 years of age, 42—between 5 and 20 years, 4—between 20 and 40 years, 25—between 40 and 60 years, 4—above 60 years, 10. Born in the United States, 56—Ireland, 26—other places, 3.